

## **Air Ventilation Cooling System for Portable Power Device**

### **ABSTRACT**

Air ventilation cooling systems are described for operation in a portable power device. Each air ventilation system comprises a cord stand in a structure that allows efficient heat dissipation generated from a power module. In a first aspect of the invention, a portable power device with natural convection for heat transfer is disclosed. In a second aspect of the invention, portable power devices with forced convection for heat transfer are disclosed. A portable power device in a natural convection mode comprises an output cord; and a stand, coupled to the output cord, for mounting a power module in a substantially vertical orientation, the stand having a base with a first vertical piece extending from the base to a first fin that is parallel to the base and having a second vertical piece extending from the base to a second fin that is parallel to the base, the power module plugging into the stand for creating a first gap along an edge of the first fin that is adjacent to the a first side of the power module and creating a second gap along an edge of the second fin that is adjacent to the second side of the power module, the stand allowing vertical heat dissipation generated by the power module with air flow vertically through the first and second gaps.